

REMARKS

Claims 1 and 4-21 are pending in the application. Claims 31-40 were withdrawn from consideration. Claim 1 has been amended for further clarification. Reconsideration of the application is respectfully requested in view of the comments below.

I. REJECTION OF CLAIMS 1, 4-5, 14-17 AND 19-20 UNDER 35 U.S.C. §103(a)

Claims 1, 4-5, 14-17 and 19-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of U.S. Pub. No. 2002/0006119 (Steudle) and further in view of U.S. Patent No. 6,553,540 (Schramm). Withdrawal of the rejection is respectfully requested for at least the following reasons.

- i. AAPA in view of Steudle and further in view of Schramm does not teach or suggest that a puncturing device is configured to output a signal which indicates a position of an empty location in the output data stream, as recited in claim 1.*

Claim 1 discloses an electronic transmitter device comprising a puncturing device. The puncturing device is configured in such a way that it distributes an output data stream substantially uniformly in parallel between first and second data outputs. The puncturing device is further configured to provide empty locations in the output data stream so that a number of bits of an input data stream corresponds, including the empty locations, to a number of bits of the output data stream. ***The puncturing device is still further configured to output, in addition to the output data stream, a signal which indicates a position of an empty location in the output data stream.***

As conceded in the Office Action, the background of the specification fails to teach that a puncturing device is configured to output a signal that indicates a position of an empty location in the output data stream. (See, OA 7/23/08 p. 3, ¶ 3). The Office Action further concedes that Steudle does not disclose a puncturing device that outputs

a signal indicating a position of an empty location to the output data stream, but states that such a signal from a puncturing device would be obvious in view of the teachings of Schramm. However, Schramm does not teach or suggest this feature, as will be more fully appreciated in the following remarks.

Schramm discloses two puncturing devices P1, P2 connected in series (*see*, Fig. 9). The second puncturing device P2 can be operated with different puncturing rates. The puncturing in at least one of these two puncturing devices allows the number of bits inputted to be reduced so that additional tail bits can be added to the data frame without having to send an additional OFDM symbol (*see*, Fig. 4; col. 5, line 66 to col. 6, line 10; col. 8, lines 13-34). However, ***Schramm does not teach or suggest a signal output indicating a position of empty locations in a parallel output data stream from either of the puncturing devices P1 or P2.***

In contrast to claim 1, Schramm teaches that each puncturing device responds according to a predetermined scheme, and thus there is no signal indicating positions of the empty locations generated by the puncturing device. For example, Schramm states the following: ***“The two-part puncturing partitions the block of coded bits into two parts.*** One part . . . is subject to the “additional” coding scheme. The other remaining part is punctured by the “nominal” coding scheme.” Col. 8, lines 14-19. It is possible to split the block where the “additional” puncturing scheme is applied into multiple portions, and the order of processing can be reversed, where “nominal” puncturing is for the total block and the “additional” puncturing is then applied to only a portion (*see*, col. 8, lines 25-34). In contrast to claim 1, Schramm does not teach or suggest a signal indicating positions of the empty locations because the system responds to a predesigned puncturing scheme. There is no need to indicate a position of empty locations when each puncturing device (P1, P2) acts according to a predetermined scheme, namely “additional” or “nominal” puncturing for a specified section of the block, as taught by Schramm. Consequently, the teachings of Schramm do not suggest to ***one of ordinary skill in the art that the first puncturing device outputs a signal indicating a position of empty locations because the puncturing***

carried out by the first device P1 is irrelevant to the second puncturing device P2, and/or is known to the second device already according to the disclosed scheme.

Therefore, Schramm does not teach or suggest this feature, as recited in claim 1.

Further, the inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness. MPEP § 2112. In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. MPEP § 2112 (*citing Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)). No technical reason has been given to reasonably support that either puncturing device P1 or P2, outputs a signal indicating a position of empty locations, as recited in claim 1. Withdrawal of the rejection is therefore respectfully requested.

- ii. One of ordinary skill in the art would not have been motivated to modify the puncturing device of AAPA with Steudle and further in view of Schramm because such a modification would render the invention of Schramm inoperable.***

The Office Action states that one of ordinary skill in the art would clearly recognize that it would be obvious for the first additional puncturing unit of Schramm to output a signal which indicates a position of the punctured data in order to provide a system with flexibility and reduced complexity when different code rates are used. Applicants respectfully disagree.

In addition to not being taught anywhere in the cited reference of Schramm, one of ordinary skill in the art would not have modified a puncturing device of AAPA to output a signal indicating empty locations. In particular, empty locations are not disclosed by Schramm as part of a puncturing scheme because the invention would be inoperable otherwise, as will be discussed below.

One of ordinary skill in the art would not have applied a gapping puncturing scheme as taught by Steudle **because Schramm specifically reduces the number of bits so that transmission of additional bits does not require the transmission of an additional OFDM symbol 5** (see, Fig. 4; Abstract). If the puncturing scheme produced empty locations or gaps, the puncturing would not create any space for the additional tail bits, and thus, the additional OFDM symbols would still be needed in the system of Schramm. Therefore, one of ordinary skill in the art would not have been motivated to modify the teachings of AAPA in view of Steudle with the teachings Schramm because the invention of Schramm would be inoperable otherwise.

In addition, Schramm indicates that different PDU's can be used when the number of symbols where the "additional" puncturing scheme is applied is smaller than or equal to the smallest number of symbols per PDU, and the number of puncturing patterns does not exceed the provided number of "nominal" code rates (see, col.8, lines 36-45). This does not provide motivation for a signal indicating a position of empty locations, as recited in claim 1. The flexibility and reduced complexity of the system taught by Schramm is a result of being able to avoid bit padding for the last OFDM symbol (see, col.8, lines 60-63), which is not the same as a signal indicating a position of empty locations, as recited in claim 1. A puncturing scheme with empty positions would not allow this flexibility as discussed above. Therefore modifying a puncturing device with a signal indicating empty positions would not be obvious to one of ordinary skill in the art. Withdrawal of the rejection is therefore respectfully requested.

iii. One of ordinary skill in the art would not have been motivated to modify the puncturing device of AAPA with Steudle because such a modification would render the invention of Steudle inoperable.

The Office Action concedes that AAPA fails to teach "wherein said puncture locations are provided in the output stream as empty locations." (See, OA 7/23/08 p. 3, ¶ 3). The Office Action states that Steudle teaches creating empty locations in an input

signal using a puncturing device, and therefore it would have been obvious to modify the puncturing device disclosed in AAPA with the known method of gap insertion via puncturing as disclosed in Steudle. Applicants respectfully disagree in light of the remarks below.

Steudle teaches methods for generating measurement gaps performed in a compressed mode, in which the required measurement gap comprises time-slots of two consecutive time-slot frames. The measurement gaps in different time-slot frames are generated with different gap generation methods, such as by puncturing data being transmitted, halving the spreading factor, or buffering the data transmitted (*see*, para. 0014). However, Steudle states that it is not always possible to implement maximum puncturing in compressed mode and so other measurement gaps in consecutive time-slots are generated by different methods. For example, because puncturing is also used to adapt data rates in an ordinary transmission, as with the case in AAPA (para. 0007), it is impossible to generate a gap advantageous for measurements of a measurement gap. Additionally, “[w]hen using the puncturing method . . . maximum puncturing is not always possible in compressed mode, due to a possible data rate adaption (para. 0009).” The device of AAPA is selecting a coding rate in accordance with IEEE standard, ETSI standard, etc. ***in order to define a certain data rate adaption*** (*see*, para. 0007; para. 0034; para. 0036). Consequently, the puncturing device of AAPA would render the method of defining measurement gaps for making measurements inoperable as taught by Steudle, and thus one of ordinary skill in the art would not have been motivated to modify the puncturing device of AAPA with the method of Steudle. Withdrawal of the rejection is therefore respectfully requested for at least this additional reason.

Claims 4-21 depend upon claim 1 and add further limitations thereto. As highlighted above, AAPA in view of Steudle in view of Schramm does not teach or suggest the invention of claim 1. Accordingly, withdrawal of the rejection of claims 4-21 is respectfully requested.

II. CONCLUSION

For at least the above reasons, the claims currently under consideration are believed to be in condition for allowance.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, LLP134WOUS.

Respectfully submitted,
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